

PATENT ABSTRACTS OF JAPAN

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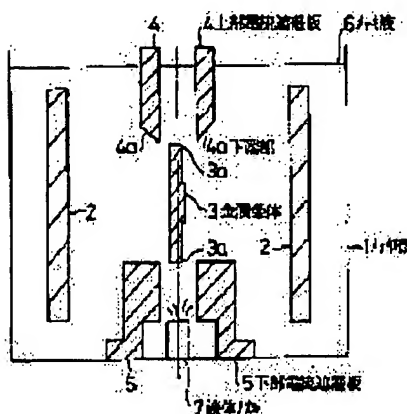
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(54) ELECTROPLATING DEVICE

(57)Abstract:

PURPOSE: To prevent the thinning of plating at the upper end of a metallic strip when a current shielding effect and a fluidizing effect are added and to uniformize the plating thickness distribution by forming the lower end of a current shielding plate into an optimum shape.

CONSTITUTION: A specified inclination is provided to a current shielding plate 4 on both sides above a metallic strip 3 to wedge the lower end 4a. Consequently, a primary current flowing toward the upper end 3a of the strip 3 is increased. The inclination at the lower end of the current shielding plate 4 is preferably controlled to 60-80°.



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[0002]

[Conventional Art]

Fig. 7 shows the constitution of the conventional electroplating device disclosed in, for example, Japanese Utility Model Publication (KOKOKU) No. 61-45164 or the like. In this device, anodes 2 are provided in a plating bath 1, and a metallic strip 3 as a cathode is vertically oriented in cross section to be caused to travel. At both sides of an upper portion and a lower portion of the metallic strip 3 to be caused to travel, current shielding plates 4 and 5 for regulating plating current are provided respectively. Further, in the vicinity of the current shielding plates 5 at both sides of the lower portion, a fluid nozzle 7 for fluidizing a plating solution 6 by ejecting a fluid such as air from between them is provided. A lower end portion 4a of the upper current shielding plate 4 is orthogonal to the side surface.

[0003]

Increase in plating thickness of an end portion 3a of the metallic strip 3 is prevented by regulating the plating current with the current shielding plates 4 and 5 at the upper and lower portions, and the plating solution 6 in the vicinity of the metallic strip 3 is sufficiently agitated with the fluid nozzle 7, whereby the primary current distribution is uniformized, and uniformization of the plating thickness distribution is achieved.

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[0013]

[Embodiment]

Fig. 1 shows an embodiment of the present invention. In this embodiment, predetermined inclinations are provided to current shielding plates 4 at both sides of the upper portion to form lower end portions 4a into wedge shapes. The inclination direction is from the upper portion of the lower end portion 4a at the side of the anode 2 to the lower portion of the lower end portion 4a at the metal strip 3 side so that the lower end portion 4a comes to a point at the metal strip 3 side, and the lower end portions 4a and 4a of both the current shielding plates form the shape of an inversed Japanese letter "ㄟ".

[0014]

By forming the lower end portion 4a of the upper current shielding plate 4 into a wedge shape like this, fluidization of the plating solution 6 at the upper portion of the metal strip 3 is sufficiently performed, even if the current shielding effect by the current shielding plates 4 and 5 and the fluidizing effect by the fluid nozzle 7 are added, excessive shield of the current does not occur, and primary current is uniformized. Therefore, the problem that the plating thickness of the metal strip upper end portion 3a is thinned is eliminated, and the uniformization of the plating thickness distribution is achieved.

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